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THE EDUCATIONAL VALUE OF SCHOOL AND INDUSTRIAL WORK

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The twofold educational value of school and industrial work to the optometrical practitioner is, first, the value to the consultant in bringing directly to him or her our optometric knowledge; second, the value to the practitioner by being constantly consulted along non-optometrical as well as optometrical lines. Therefore, our fund of knowledge must include more than optometry.

School Work

Nature equips the average child with vision which is suitable for his outdoor play life, for this part of his life is the nearest we approach the prehistoric child's life; the demands on the eye are very much the same and well within its physiological capacity. Unfortunately this does not hold true for his home and school life. A child, awakened at night, almost always is obliged to stare at a gas or electric light while his parents try to quiet him. At a later period, such things as games, puzzles, books and magazines make exacting demands on his eyes, age considered, often under insufficient or glaring illumination.

The experience in my own home is such as to try sorely the parental patience which is even like that commonly credited unto Job. In spite of warnings, correction and scoldings our daughter will make unusual demands on her eyes—not once but many times daily. A favorite performance of the younger element is to spread the evening paper on the floor, usually in a corner to avoid being stepped on by others, and thus at leisure absorb the wisdom and complete their higher education from the so-called comic section. Despairing of correcting this practice we moved the table to the favored corner and by means of a table lamp assured good illumination. But the first night after the change she discovered another dark corner which apparently suited her better. She will read while facing a window with a bright sky exposure, assume positions best calculated to produce glare and strain from artificial lights, and will read or play games in the poor light of dusk rather than to bother herself to the extent of turning on the lights. I have many times observed children in the homes of friends doing this very same thing, but never have I observed any parental correction. From this it seems reasonable to conclude that there is a general lack of supervision by parents of the strain children place on their eyes; and this supplemented by inadequate illumination in the home inevitably brings about defects of vision.

We have not yet reached the stage where we may point with pride to the lighting of our public schools. Many of our schools, especially those recently built, are well lighted, but the majority of them are not. Insufficient illumination and glare from desk tops and blackboards are two of the most common faults, and unfortunately these are two violations of good lighting principles that are likely to injure the eyes.

Fairly comprehensive investigations have established the fact that fully 60 per cent of our children in school have defective vision. A certain percentage of these defects of vision are either inherited or brought about by misuse of the eyes before the children enter school. With this start and the average unsatisfactory school lighting to help along, we find a material increase in the number of children with defective vision at the end of the high school period when compared with the number at the beginning of the school period.

Education

Our education, then, for better vision must begin in the home. We must educate the parents by placing before them the facts regarding the illumination—the proper diffusion of light, both natural and artificial, the harmful effects that can come from direct and reflected glares, the excessive eyestrain from low illumination, and why the use of the added nerve energy, in the act of vision, affects the general health.

Industrial

The problems that confront us with the industrial employee varies vastly from the school work. First, because the consultants range in age from 16 to 75 years, therefore our accommodation is from nothing to 8 dioptres. The average industrial employee is not holding his or her position from choice, but from necessity, therefore we have a different mental attitude than with school children. In many cases physical handicap necessitates the particular kind of employment; in others, lack of education, due to defective vision or some other cause, which proved such a handicap that they were unable to keep up in their studies; still others, due to pressure being brought in the home; and lastly, from the need of a livelihood. So mentality plays an important part in our success and failure. Industrial employees aspire to live, to dress, to go as do others in higher stations in life and with greater incomes. Many resent being called industrial employees, they resent being told of their physical handicaps; instead, they put on a bold front, suffer their inconveniences, knowing their weaknesses, with a result that they live a life of dread, depressed as they enter the organization in the morning, therefore, they are inefficient throughout the day.

Statistics

Statistics prove that 85 per cent of industrial employees show an eyestrain condition or an error of refraction, and that 40 per cent of these are in need of optometric attention. These 40 per cent are divided into two classes, 15 per cent that will require the application of lenses for temporary wear, and 25 per cent that will require the application of lenses for permanent wear. Of the remaining 45 per cent, 8 per cent show some form of pathology, 10 per cent are affected by malnutrition, 10 per cent by illumination, and 17 per cent from unknown causes, due to the disinclination on the part of the employee to co-operate.

Causes

It would be impossible to give the cause for these conditions, as in the school children. Possibly the same factors would cover it. We do know, however, that there are many causes for the present condition, some of which can be eliminated. First, we can educate the employee regarding the effects of pathology and malnutrition; second, we can prove to the employees by a series of time studies how inefficient they are in a given work; by the rearrangement of colors, work, posture, etc., we can show an increase in production with less fatigue; third, we can court the confidence of the employees by mingling with them during their noonday games, parties, etc.; fourth, we can prove to the management by the time studies the effects of faulty illumination; fifth, we can place before the management various records compiled over a period of months, showing the various factors that enter into the inefficiency of the employees.

Let me give you an illustrative case that came to my attention. A salesman for one of the organizations was required to do a large amount of driving. From April 1, 1923, to April 1, 1924, he had 14 bumping accidents, each time being reimbursed by the company that carried the car insurance. On February 1st the insurance premium was increased, a penalty on manual rate. Being a good salesman and hard to replace, the company kept him on the payroll, paying the accident costs. It was also known by the management that this man was addicted to the use of alcoholic stimulant. April 12th this man came under the company ruling for eye survey. Lenses were applied and general explanation given regarding his condition. October 1st consultant returns from a western trip. Reports—no accidents, no alcoholic stimulant since June 1st. Results—insurance premium lowered, and an added credit on manual rate given, salary raised, eats better, sleeps better, gained eight pounds in weight. Cause —excessive use of nerve energy in act of vision, required a stimulant of some nature to relieve fatigue. The appli-

cation of lenses relieved fatigue, therefore the desire for drink.

Results

The results of our experience on data compiled over a twelve months' period in one industry show that from February, 1923, to February, 1924, we had 11 serious accidents, 5 faintings, 3 that fell on machines—none serious. Our labor turnover was 32½ per cent. Cause—lighting inadequate, malnutrition, excessive dissipation in some form on the part of the employees. Our records show that from April 1st, 1924, to October 1st, 1924, after a complete change in lighting and general education of the employees—one accident, no faintings, labor turnover 8 per cent, lighting efficiency increase 22 per cent, production increase 12 per cent—not positive, due to the character of work done, kind of material, etc.

Motor Car Drivers

Our experience is somewhat limited on data compiled only over a period of a few months and on 89 drivers shows 50 per cent defective, not necessarily from vision alone, but in vision, color, and visual range. It further shows pathology of more than 22 per cent, not all of which show visual defects. Focal infection plays an important part in the lives of these men, due to the changes in temperature, rain, etc. Fourteen show focal infection of some kind.

Optometric Education Required

We have told you of the conditions in school children, the condition of industrial employees, and of motor car drivers, and I feel that you will agree with us that there is much to be done that lies within our sphere.

First, we must know pathology, not only eye pathology, but we must have a general understanding of disease conditions; second, we must know the effects of malnutrition, and the part malnutrition plays in production.

We must use and understand the ophthalmoscope, learn to interpret our findings, not only for the benefit of the consultant, but for our own good, and the profession as a whole, because the sooner we perfect ourselves in the art of ophthalmoscopy, just that soon will we increase our own self-respect.

Study transillumination, use it, make correct interpretations of your findings, and advise consultant of your findings.

Become familiar with the X-ray pictures and learn the interpretations so that you can talk intelligently to dental and medical practitioners about radiography.

Learn the fundamentals of illumination. Study the effects produced by direct or reflected glares and shadows. Learn the required amount of illumination for a given application.

Were I to ask the question—What should be the temperature of this room to be comfortable? any one of you would reply—65 to 72 degrees. And were I to ask you to define a unit of heat, few, if any, could answer. Now, suppose I ask, How many foot candles of illumination should we have in this room to be properly lighted? How many of you can answer?

Yet it is just as important to know the amount of illumination as it is to know the degree of heat, since we, as practitioners, deal with light and not heat, only for our own comfort. Get in touch with your illuminating engineer; he will gladly assist you in getting this information.

Be familiar with the campimeter, know what it will do and what it will not do. It is absolutely indispensable in industrial work. Map out several fields, and if necessary have them verified and use the instrument on each case.

Summary

There should be no need to dwell upon other instruments and methods. All should be familiar with their use, and I trust that from the foregoing you, as practitioners, appreciate what a tremendous field is open to you and that you will make every effort to qualify. As an engineer would put it, "The opening and contracting of the pupil and the change in the shape of the lens causes more fatigue per foot pound of work than any other exertion. While the amount of muscular energy expended on this adjusting the eyes is very slight, the resulting fatigue is enormous. The abuse of the eye by badly arranged lights and work probably causes us more unnecessary fatigue than any other one thing."

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American Magazine, September, 1924, page 59.

RELATIONSHIP OF FUSIONAL CONVERGENCE AND ASTIGMATISM TO CYCLOPHORIA

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Having read the articles on Cyclophoria in the American Journal of Physiological Optics for October, the writer was prompted to make some experiments on his own eyes and would like to set forth the details of those experiments together with his conclusions drawn therefrom. While the facts below related may be common knowledge they have opened up a new field of thought to the writer and that is his excuse for setting them on paper. May it be said before proceeding further that every experiment related hereafter was repeated many tims and the results were in every case uniform. Let it further be noted that when the writer refers to the Maddox rod as being in a true position he means that the axis of the rod is at 180 when considering a vertical streak and at 90 when considering a horizontal streak.

Experiment 1. The writer was seated behind a De Zeng phoropter properly leveled and his distance prescription as follows in place: O. D. plus .75 D cyl. axis 70,• O. S. plus .50 D sphere minus 1.50 D cyl. axis 05. Two Maddox rods were then turned into place, one before each eye at axis 90 and the gaze directed at a point of light twenty feet distant in the isogonal plane. Of course the writer beheld one single definite horizontal streak, and let this be borne in mind, for I shall refer to it later. Prism base up over O. S. was then turned in until two horizontal streaks of light appeared, the lower streak diverging downward to the right. The rod over the left eye was now adjusted so the two lines of light were parallel and the instrument showed two degrees of plus Cyclophoria. The two lines were now allowed to approach each other by slowly decreasing the prism and I was able to fuse them with three prism diopters base up on O. S. The rod over O. S. was then set with axis at 90 and at once the streaks diverged at either extremity, coinciding only partly along their middle portion. Keeping in mind there was still three prism diopters base up on O. S. the streaks were allowed to remain thus for some time (trying the experiment again and again), but I was unable to fuse them. The prism on O. S. was now slowly reduced to zero, and the image of the left eye was carried above that of the right, diverging to the left, and it required from five to ten minutes before the image of O. S. subsided and was fused naturally with the image of O. D. Now why was I able to fuse the parallel streaks with three prism diopters base up on O. S., when upon setting the rods in their true position, i. e., axis 90, I could not fuse them? My explanation would be that the strain incidental to the maintenance of fusion induced a Cyclophoria and this Cyclophoria remained in evidence as long as the prism was in situ. Why in the last instance with the prisms at zero and the rods both at axis 90 did I behold two lines crossing near the middle, when with the prism and the rods in identically the same positions when I first seated myself I beheld only one streak? A plausible explanation would be that in order to maintain fusion in spite of the prism a temporary spasm had been set up so that when the prism was removed the spasm still continued and did not subside for some minutes.

Experiment 2. The Maddox rods were now placed at axis 180 as shown by the De Zeng instrument, and the writer beheld only one vertical line of light. Then prism base in over O. S. was turned in and it was noted the streaks diverged downward. I repeatedly turned prism back and forth causing the streaks to approach and recede, and it was apparent that just before fusion occurred completely, the streaks would merge first at the top and then lastly at the bottom. But it was noted that if prisms of high power were turned in and the streaks became widely separated, no divergence was apparent, they appeared parallel. I then went back and set the prism base in over O. S. so the streaks were close together, but just so I could not fuse them. As before the streaks diverged downward and I tilted the rod over

O. S. so the streaks appeared exactly parallel and the instrument showed two degrees of plus Cyclophoria. Then turning in a strong prism base in over O. S. so as to cause wide separation of the lines they diverged at the top, and the more remotely situated the more apparent the divergence. Then the rod over O. S. was set at axis 180 again and the lines appeared parallel.

Now in my mind the explanation of the above phenomena lies in assuming that Cyclophoria is a result of fusional convergence, for when the streaks were adjacent and fusion operative, the divergence was apparent, but when the streaks were so far removed as to be no possibility of fusion, no convergence was exerted, hence no Cyclophoria was in evidence. I think these conclusions are more fully warranted by the following:

Experiment 3. It will be noted both in experiment 1 and 2 that the Cyclophoria of the writer registered on the instrument as two degrees. Now after adjusting instrument properly (i. e., levelled, rods axis 180 and prisms at zero) I find upon turning base out over O. S. that the lines of light diverged upward, and by a greater amount than when prism was base in. Upon tilting rod over O. S. so the lines appeared parallel, the instrument showed four degrees of plus Cyclophoria. This was repeated many times and the Cyclophoria evidenced with base out was always at least twice as great as with base in.

These experiments prove conclusively to my mind that Cyclophoria is a variable quantity in any individual, and is wholly the resultant of undue effort on the part of the individual to maintain fusion; the greater the effort the more the Cyclophoria.

Experiment 4. The above experiments were made with the object of regard, in the isogonal plane, and with a view to measuring Cyclophoria when the eyes are inclined as in reading, the following experiment was performed: A lighted candle was used as point of fixation and placed on the floor five or six feet away. The De Zeng instrument was mounted four and one-half feet from the floor, properly levelled and directed toward the candle. A Maddox rod was placed before each eye in a true position showing one vertical streak. Upon turning prism base in before O. S. the writer was unable to detect any divergence of the lines after separation; however, upon turning prism base out before O. S., a divergence of the lines upward was readily detected, and the instrument registered the same amount of divergence as when the test was made in the isogonal plane, namely four degrees of plus Cyclophoria. An assistant was asked to move the candle slowly toward the observer and at all positions up to within twelve inches of the eyes it required an adjustment of four degrees in the left rod to render the lines parallel.

My explanation for the fact that no Cyclophoria was shown in the above experiment when prism was base in, would be that positive convergence due to nearness of the point of fixation neutralized any Cyclophoria set up by the prism. Now it may not be wise to vouchsafe an opinion on the results of one experiment, although tried over and over, but to the eyes of the writer, the amount of Cyclophoria in the isogonal plane when prism was base out was uniform with that shown when the visual axes were depressed.

It may be inquired why these experiments were made without using a double prism over one eye, and my answer is that I wanted fusion and convergence to exercise their full powers just as they do in everyday life. The results of any experiments are more reliable when conditions are made as nearly normal as possible.

Now all authorities admit the intimate connection between accommodation and convergence and I am convinced that accommodation is the more dominant of these twin faculties. To illustrate, we are all familiar with cases of Hypermetropia of high degree where excessive accommodation was accompanied by such undue convergence as to cause esophoria and in a great majority of cases the esophoria is relieved by merely correcting the Hypermetropia. Why do we not reverse the order and try to relieve the accommodation by correcting the undue convergence? Because accommodation is the dominating faculty and carries the convergence **with** it. Now then, since in the writer's opinion Cyclophoria is the result of undue effort to maintain fusion, does it not follow that any correcting lenses establishing harmony

between accommodation and convergence will automatically alleviate if not ultimately correct any disturbing Cyclophoria? In short, Cyclophoria is an **effect, not a cause,** and in all optometric procedures we should strive to remove causes and not effects.

Now we come to a consideration of astigmatism as applied to Cyclophoria. Let us revert to an experiment.

Experiment 5. Now my wife has no Cyclophoria except when exercising undue positive convergence, then a slight amount is demonstrable. But with a Maddox rod before either eye showing a horizontal streak of light and turning four degree prism base up she sees two parallel streaks and will not permit tilting of either rod one degree. Now upon placing in phoropter a minus 3.00 D. cyl. axis 30 she admits streaks are not parallel. Here we have Cyclophoria induced by oblique astigmatism; but if I correct the astigmatism with a plus 3.00 D. cyl. axis 30 the lines immediately again become parallel and the Cyclophoria at once subsides. Here again the Cyclophoria is the effect and not the cause. Now suppose my wife were compelled to wear the minus 3.00 D. cyl, for a few months, do you think the Cyclophoria would immediately subside when the plus 3.00 D. cyl. was placed over her eye at axis 30? Most assuredly not, because certain muscles of her eyes would have cultivated abnormal strength due to the maintenance of fusion in spite of the cylinder and they would be slow to subside to their normal condition. Other muscles would have become weakened and they in turn would be slow to regain their normal strength. Do you think then in the above case, the proper procedure would be to rotate the axis of the cylinder in order to relieve the Cyclophoria? Such a method of correction would surely not seem advisable since the Cyclophoria was not the disturbing factor, but the astigmatism. A more rational course would be to leave the plus cylinder at axis 30, but supplement it with exercising those muscles that were lacking in tonicity, and unquestionably within a few months her eyes would again become normal.

The writer wishes right here to plead guilty never to having attempted to correct Cyclophoria. I have had patients wearing their first pair of oblique cylinders come back to me complaining, "The ground wasn't level," "The walls leaned," "Pictures didn't hang straight," etc., but I have never failed to see all such cases eventually submit with good grace to the oblique cylinders, if the refraction was properly made.

A PRACTICAL METHOD OF PRISM TREATMENT IN EXOPHORIA

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How many optometrists have tried giving prism treatments and eventually given up this very important work because it took too much of their time? Their method of giving these treatments did not prove satisfactory. It is so much easier to prescribe a partial correction, and then change the lenses when the patient comes back, that many refractionists fall into this easier method of treating these cases. And this latter course would be all right if it were not for the fact that a large per cent of these patients will never come back, at least, not to you, and those who do, will not enjoy the comfort of normal muscle balance.

All methods of muscle exercising might be classified under two general heads, office treatment, and, home treatment.

Dr. Robinson in his splendid book, "Oculo Prism Treatment," which is a credit to the profession of optometry, has described in detail his system of office treatment with rotary prisms. This is a very good method, but it can not be used on out of town patients, and takes too much time to use on those who could come to the office every day.

Finger exercising as advocated by Dr. Thorington gives good results when they are carried out, but very few patients will carry it out. To put it in his own words, "That success shall result from ocular gymnastics means perseverance on the part of the

patient and the exercises systematically executed." Nine out of ten patients will not persevere in the systematic execution of this system. This is more or less true of all purely home treatment systems.

The method here outlined is really a combination of both systems. It combines the advantages of both, and eliminates the disadvantage of either system.

It is necessary to have several prism exercising sets consisting of a frame and five prisms each. Each set consists of one 6, 8, 10, 16 and 20 degree prism. This gives a range of from six to forty degrees. It is also necessary to have a card of instructions printed.

The hyperopia and astigmatism is first corrected, with the strongest plus that the patient will wear, which is only a part of the true error. The patient is then instructed in the use of the treatment prisms and card. He is requested to follow the instructions as printed on the card, and, if possible, to report back to the office in one week. The card is illustrated in Fig. 1, the full directions for its use printed thereon.

This card was printed to take care of the patients living out of town who could not come to the office every week. But it worked so well on these patients that the writer has since abandoned altogether the daily office treatments. And in his own experience has secured better co-operation with patients living in town than with the office treatments.

The psychology of the success of this system lies in the fact that the patient is given a definite task to accomplish each week. At the end of each week when the patient reports for a check on his muscle balance, a record is made of his ductions, reserve convergence, and phoria at the near point and far point. By the end of the first two weeks a marked improvement in visual comfort is noticed by the patient. From then on he will manifest a keen interest in noting the increase each week in the power of adduction, and positive reserve convergence. It is explained to him at the start that he has only a strength of so many degrees in this muscle. As it increases he understands what is being accomplished, and continues to co-operate with the refractionist until he can overcome the strongest prism.

DIRECTIONS FOR USING EXERCISING PRISM

Pin this card on a wall 15 or preferably 20 feet away. Go over to within two or three feet of it. Put the prisms on, being sure that they are on straight. Now look at your forefinger to make it single. Push your finger away from you until it is near the card on the wall. Transfer the gaze to the card. Then back slowly away to the end of the room, being sure that the card is single. Hold the card single for three minutes. This should be done twice, or better, three times a day, immediately after meals. If the card should separate into two cards before you get back to twenty feet, repeat the process until you can hold it single or twenty feet.

At the end of five days try putting on the prisms and look at the object across the whole length of the room and make the two cards come into one. As soon as they are one, raise the prisms and then lower them again to make the two come into one. Repeat this twenty times, three times a day for two days.

Now, if you can do this without having to come closer than twenty feet to make the cards single, it is time for you to send the prisms back, marked with your name and address, and I will send you a stro ger pair. You will then repeat the process, returning the prisms every wee.. or ten days until your muscles have been restored to a normal balance.

Be careful not to overdo the exercises at the start. If your head aches after exercising, or on the following day, do not exercise them so long at one time. One minute at a time is all that some eyes can stand, at the start. Then increase the time a little every day until you can conform to the system outlined above. You can not injure your eyes with the prisms, but it will make your head ache if you work these delicate eye muscles too hard.

Bear these things in mind. The modern care of the eye is determined by exact, mathematical determination in which guesswork has no part. That if this system is followed exactly, results are sure; but if followed with small interest and confidence, they may fail. Every day that you follow through this formula of exercise, you may say to yourself, knowing it to be true, "I am a step nearer perfect muscular co-ordination and so nearer perfect eye comfort."

B. G. BAUMAN, DOCTOR OF OPTOMETRY

FIGURE 1.

As a rule when thirty degrees have been reached it is time to prescribe the full correction which will now be accepted with comfort. The prism exercising is continued for two more weeks or until forty degrees can be overcome. You can now dismiss your patient with the satisfaction of knowing that you have rendered service worthy of the profession of optometry.

Since this paper was written the writer received the February number of the Northwest Journal of Optometry, containing the authoritative and well rounded out essay on "Muscle Treatments in Exophoria," by Dr. J. I. Kurtz. Dr. Kurtz says in part, "In order that muscle treatment work be more successful and to make its technic more popular with the public the following improvements will have to be made.

"1. Improvement in the technic of muscle treatment so that it may require less time to get the desired results."

While the technic outlined above leaves much to be desired in reaching our ultimate goal, this much can be said of this method:

1st. It takes much less of the refractionist's time.

2nd. It takes less of the patient's time, only a few minutes each day at home instead of daily trips and waiting at the office.

3rd. Better co-operation, and, therefore better results are obtained.

For these reasons I believe it is an improvement in the technic of muscle treatment.

NOTES, CASES AND INSTRUMENTS

SUSPECTED CASE OF KERATOCONUS

Walter B. Lyon, Opt. D.
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This patient is a girl of 17 years refracted by myself three years ago, the correction for both eyes being myopia with hyperopic astigma, axis oblique, no abnormal condition showing itself at that time. Two years ago her glasses were changed and yet no abnormal conditions showing. On July 28th, 1923, she returned, complaining that her vision was very poor even through the glasses and that her head and eyes felt uncomfortable at times. There was no direct pain, and there had not been any; on pressure with the finger tips through the lids there is no more discomfort than with the normal eye. The ophthalmoscope examination was not easily made, the fundus was not discernible; no opacities in the media. Oblique illumination showed a distinct conical cornea. This was not observed in the previous examination, therefore causing us to suspect keratoconus. With the use of the ophthalmometer the diagnosis seemed to have been confirmed, and in four consecutive examinations a month apart the condition has not progressed. However, the mires could not possibly be lined up with any degree of accuracy, due to an effect of torsion. My ophthalmometer readings July 28th were O. D. 45 at 45 degrees and 49½ at 135 degrees. O. S. 45½ at 30 degrees and 47 at 125 degrees. The last reading, December 5th, O. D. 46 at 45 degrees, 49¾ at 135 degrees, O. S. 47¾ at 30 degrees and 49½ at 125 degrees. Since the torsion effect on the mires does not allow perfect alignment, it is very hard to state how much more accurate the last reading was than the first. However, my retinoscopic findings were very poor; the scissors movement was so decidedly pronounced and so changeable that I made no authoritative record because I could not do so and have it anywhere near correct. The cylinder axis in the scissors movement checked with the ophthalmometer.

A cross cylinder test with a minus .50 on a plus .50 and a minus .25 on a plus .25 proved a correction with the agreeable results as follows: O. D. minus 2.00S, plus 4.25 X 145, giving V. A. of 20/30 minus 2 letters. O. S. minus 1.00 with plus 4.00 X 25, giving V. A. of 20/30 minus 2. This was the final earlier result and I have examined her eyes every month, but on December 5th, 1923, found vision without glasses somewhat improved and a slight variance with correction O. D. 20/70 —2.00 with plus 4.50 X 145. V. 20/30 —2 O. S. 20/70 —2. —1.50 with plus 4.50 X 20/30 —4.

The muscular tests show weak convergence at the N. P. AB. of 18 degrees; Ad. of 14 degrees and three degrees each of right and left superduction. I found exophoria at distance of 3 degrees and 12 degrees at the near point. However, this weakness does not seem to cause any discomfort. She does quite a little sewing and reading, although I have warned her most emphatically to use her eyes at near for short periods at a time only, for the present, with plenty of rest periods in between.

It has been over six months now since I last reviewed this case. However, patient came in for an adjustment a few days ago—eyes are O. K. and the condition is stationary for the present. I think that it will remain so.

Without a doubt, Keratoconus was developing very rapidly for a short space of time before it came to my attention. I did advise her to see her physician, and also a trip to Rochester or the Twin Cities to consult with an oculist, as I did not care to carry the responsibility of such a case, nor did I care to have the girl lose the ultimate use of her sight. However, they delayed going and so I kept in close touch with her, making notations of my observations each time she called. That the disease is a dangerous one at time of puberty is well known, but evidently her physical condition during the change from childhood to womanhood cleared and relieved the pressure from within which was rapidly causing the conic cornea.

THE REFRACTION OF TWINS

E. O. Fjelstad, Opt. D.
Red Wing, Minnesota

In the December issue of the Northwest Journal of Optometry, a report of cases of brothers having identical corrections was given by Koch. This brings to mind cases in my records of apparently identical twins having different corrections. One of the twins had been wearing glasses for about a year and a slight change was made to bring about a better balance in binocular vision. The final Rx for Twin I. L. was O. D. + 0.50 D. Sph. = + 0.50 D. Cyl. axis 90; O. S. + 0.50 D. Sph. The other twin, a sister, H. L., showed a marked deviation from the other in the correction accepted, it being O. D. + 1.00 D. Sph. = + 1.00 D. Cyl. axis 90; O. S. + 1.25 D. Sph. The left pupil was about 2mm above the horizontal plane of the right and slightly larger in size. H. L. showed a slight amount of esophoria, while I. L. showed orthophoria.

Another set of apparently identical twins wearing the same correction showed a difference at the 40-inch dynamic findings of one-half diopter. There was also a difference in tonicity, which, as with the dynamic findings, may be interpreted as being different on account of the personal equations entering into the examination. The most interesting feature of this case was the difference in the interpupillary distances, as A. H. measured 60mm and H. H. 58mm. The final Rx in both girls being O. D. —3.00 D. Sph. O. S. —2.75 D. Sph.

ABSTRACT DEPARTMENT

Optometric and ophthalmic journal articles and reprints to be abstracted should be sent to the editor. Only papers on subjects of interest to optometrists will be reviewed in this department.

De Selms, O. C. A Study in Therapy of Light. Optical Journal and Review. Vol. XV, No. 3, pp. 33-36. 1925.

School children become restless and nervous in their class rooms on bright sunshiny days, claims De Selms in discussing the effect of sunlight on the living organism, using the protoplasm theory as a foundation for his statements. It has been noted also, he says, that the deportment of the average child is better on cloudy days than on bright ones, and this he attributes to the absence of ultra-violet stimulation received through the ocular nerve centers. He also states that tinted lenses, of the type which absorb a large portion of the ultra-violet rays without disturbing the rest of the spectrum should be prescribed for patients with light retinal pigment as these are apt to suffer from asthenopia due to the effects of bright light.

E. O. F.

Hoffmann, B. T. Eye Inflammations and Ultra-Violet Rays. Bulletin of the Illinois Society, Vol. 2, No. 8, pp. 227-230. 1925.

In a paper on the effect of the ultra-violet rays upon the eyes, Hoffmann strongly advises against the indiscriminate use of the tinted lens. These tinted lenses, he claims, should be only prescribed in certain specific cases, where certain definite work is to be done, or certain aims are to be accomplished. A few of these occasions where it is advisable to use or prescribe tinted lenses are on trips to the tropics or the polar regions; for constant exposure of the eye to a strong source of light such as sunlight or concentrated electric light; when the eyes are exposed to short circuit flashes or welders' flames; or in the glass-blowing industry for protection from the heat rays as well as the ultra-violet; and for all outdoor sports. In his opinion the average person has no need for the constant use of a colored or tinted lens.

C. C. K.

Kaufman, C. W. What the Cincinnati Eye Court Revealed. (Abst. from Motor.) The Optometric Weekly, Vol. XV, No. 48, p. 2189. 1925.

Kaufman is conducting a traffic court eye clinic in Cincinnati and finds that 18 per cent of the motorists arrested for traffic violations have visual defects of such character that it must interfere with their driving. Judge Yeatman suggests that to pass a visual test, vision in either eye must be better than one-half normal; that the fields of vision should be nearly normal and that the applicant's color perception for red, green and yellow must be normal.

T. O. B.

Laurance, L., and Wood, O. The Far Point of Accommodation and Convergence. The American Journal of Physiological Optics, Vol. VI, No. 1, pp. 23-31. (Ill.) 1925.

In an attempt to determine, in an emmetropic eye, the nearest point at which this eye could produce a retinal image as sharp as possible and still exert no accommodation, and also to determine the nearest point at which a pair of orthophoric eyes would have to exert no convergence in order that the retinal images may be fused into one, Laurance and Wood have, by the aid of mathematical formulas which they give, worked out the following simple equations to determine these distances.

"The normal far-point of accommodation varies with the size of the pupil. It is in meters equal to 7.5 times the diameter of the pupil in m/m."

"The normal far-point of convergence varies with the interpupillary distance. It is in meters equal to 7.5 times the distance between the pupils in m/m."

T. O. B.

Maybee, W. G. Modern Optometry in Theory and Practice—Glaucoma. The Journal, Association des Optometrists et Opticiens de la Province de Quebec (French-Canadian), May, 1924, pp. 15-17.

Maybee, in a paper dealing with optometric diagnostic practice, describes glaucoma as an ocular disease caused by the increased intra-ocular pressure of the eye, brought about in the following manner: The chorid secretes lymph which it imparts for the nourishment of the vitreous and the crystalline lens. This supply being continuous, there must be a like excretion in order that the eyeball may at all times have the same shape and tension. This excretion is through the vitreous, around the lens into the aqueous, through the pupil into the spaces of Fantana and Canal of Schlemm and thence to the ciliary veins. Normally the secretions and excretions are the same; however, should there become a blocking of the Canal of Schlemm, the intra-ocular pressure would become excessive and the condition we call glaucoma would result.

G. L. Du P.

Nott, I. S. Unusual Cases and Their Clinical Correction. The Canadian Optometrist, Vol. 7, No. 1, pp. 10-11. 1925.

Nott cites a case where the use of suppression lenses brought out latent conditions to an unusual degree. The patient, female, age 18, complained of dizziness, dull feeling in the head, stomach disorders and very poor distance vision, and by all known means of optometric refraction indicated a

myopia of 3 diopters. Because of her symptoms, however, a pair of + 1.00 D. Spherical suppression lenses were prescribed. These greatly fogged things at first, but after using them with slight modifications for about six weeks she was able to use a + 1.75 D. Sph. for distance wear with a + 1.00 D. Sph. added for reading with great comfort, all symptoms having disappeared. Her visual acuity was normal with the final correction prescribed.

C. C. K.

Olsho, S. L. A Range for Refraction Embodying New Features. American Journal of Ophthalmology, Series 3, Vol. 8, No. 1, pp. 57-59, 1925. (Ill.)

In the effort to remove all things which may distract the patient during a refraction, Olsho arranged a refracting room measuring 5x24 feet, the walls, ceiling and floor of which are painted a neutral flat gray. At one end of the room in vertical sliding panels are placed the test chart and the Prentice muscle device in separate cabinet form. These cabinets are set well into the wall and are illuminated by two pairs of 50-watt Mazda C Daylight lamps controlled by a reostat. Each set of lamps is vertically placed in a recessed reflector covered with ground glass to diffuse the light. Both the test cabinet and muscle device can be adjusted to the patient's eye level. To eliminate all natural light glares the windows, two in number, are fitted with a wood frame 6 inches wide, which when placed on the sill exactly fits in the inner window opening. Inside of this frame a second window shade has been placed and when both are drawn no light can enter the room.

According to Olsho, the glares, sidelights and shadows are responsible for much of the patient's fatigue during a refraction and this room has been arranged to overcome as much of this defect as possible.

T. O. B.

Percival, A. S. Alteration of the Power of a Cylinder when Used for Close Work. The British Journal of Ophthalmology, Vol. IX, No. 1, pp. 8-13. 1925.

Percival finds it advisable, in cases of high degrees of astigmatism, to increase the cylindric power in the reading glass inasmuch as his investigations disclosed that in cases where the same cylinder was prescribed for both distance and reading the effective power of the cylinder in the latter would be materially decreased. For instance, he recommends in cases where —5.00 D. cylinders are prescribed for distance wear that the reading correction should be made up of the presbyopic addition and —5.50 D. cylinders, this being the cylinder needed to correct the astigmatism at the near point. T. O. B.

Petry, E. Optometrists Should Desist From Proposing Compulsory Eye Examinations for Motorists. Rochester School of Optometry, "Focus," Vol. VI, No. 3, p. 27.

What constitutes normal eyesight for motorists? What tolerance may be established for visual acuity? What shall be the field of vision requirements? What shall be the color discrimination requirements? What shall be the ruling in the case of monocular blindness? These are the questions asked by Petry and he insists that more scientific thought and study be put upon these problems before refractionists demand that all motor car drivers be examined. He cautions: rather be backward in making these suggestions than too hasty, pushing them through and then produce work of no merit. T. O. B.

Swindle, P. F. Effect of Strychnin on Visual Reliability. American Journal of Physiological Optics, Vol. IV, No. 1, pp. 3-20. 1925.

After a series of experiments Swindle comes to the conclusion that the application of small doses of strychnin depresses sensory nerve elements and in so doing decreases the irritability of the visual nerve fibers of the retina, with the effect of temporarily improving vision, particularly in the peripheral fields. T. O. B.

BOOK NOTICES

New Books for review should be sent to Dr. E. O. Fjelstad, Red Wing, Minnesota. Only Books of such nature as to be of interest to optometrists will be used in this department. Optometric and Ophthalmic publications that have been issued in the past and which are still procurable through their publishers will also be reviewed, from time to time, as space permits.

INTRODUCTION TO THE THEORY OF SPECTACLES. O. Henker, D.Sc., M.D., Director of the Spectacle and Optical-Medical Departments of the Carl Zeiss Works, Jena. Translated by **R. Kanthack, London.** 344 pages. Illustrated. Published by the Jena School of Optics, 1924.

This is a book dealing primarily with vertex refraction, the term, by the way, having originated at the Zeiss Lens Plant at Jena. The book deals first with elementary optics, using diagrams and geometric figures to fully cover points usually explained by algebraic equations, these being used as little as possible. The author next covers the optical construction of the eye, the paths of rays within the eye, sharpness of vision and optical defects which impair this sharpness, and accommodation. The next portion of the book covers the various types of ametropia and explains the lens corrective measures to be employed to correct these errors, particularly dealing with lens values as pertaining to their effectiveness before the eye. The book is written with the refractionist in mind, thus making it a valuable addition to an optometric library. T. O. B.

THE RELATIVE POSITION OF REST OF THE EYES AND THE PROLONGED OCCLUSION TEST. By F. W. Marlow, M.D., M.R.C.S., F.A.C.S. Professor of Ophthalmology, College of Medicine, Syracuse University. Illus., p. 96. Phila.: F. A. Davis Co. 1924.

Some seven hundred persons varying in age from nine to seventy-eight consented to have one eye occluded for a period ranging from one to twenty-seven days for the mere reason of aiding ocular science. Marlow has filled this monograph with tables and charts showing in what percentage of cases heterophoria of different types become greater or lesser after a period of occlusion. The tables and charts tell their own stories. All in all, the monograph is a valuable adjunct to a library on myology, as it clears many points on occlusion.

E. O. F.

LIGHTING IN RELATION TO PUBLIC HEALTH. By Janet H. Clark, Ph.D. 185 pages. Published by Williams and Wilkins Co., Baltimore. Illus., 1924. Price $4.00.

This book consists of an account of the course, given by the author, at the School of Public Health of the John Hopkins University. This course is given for students studying for the degree of Doctor of Public Health. The first three chapters deal with illumination and means with which to measure it, the next three dealing with proper illuminants and the elimination of glares and goes into detail as to what comprises the proper types of lighting for schools and factories. The last four chapters deal with visual defects caused by poor illumination and methods to protect students and workers from these defects. Inasmuch as this is largely an optometric problem the book becomes a splendid reference book for optometrists and should find itself in high favor among members of our profession.

E. O. F.

"A Book Fitly Chosen is a Life-Long Friend"—Jerrold.

SPECIAL REPORT

OPTOMETRIC CLINICS—PART I

Being a Digest of the optometric and ophthalmic literature on this subject for the year 1924, as taken from the lists of papers on Industrial Eye Work, in the CURRENT LITERATURE department appearing monthly in the Northwest Journal of Optometry. This is the first of three parts of the second digest, the second part to review literature on Post-Graduate Clinics, and the third to review literature on Clinics for Motorists. The first digest, covering a review of the 1924 literature on Visual Work in Schools, appeared in the February issue of this Journal, while the third digest will appear in the June issue, it being a review of the 1924 literature on Refractive Work in Industrial Organizations, by

C. C. Koch, Opt. D., F.A.A.O.
Minneapolis, Minnesota

Permanent Refractive Clinics

ESTABLISHMENT

The Maryland Optometric Clinic, writes **Andreae,** was established in April of 1923. The Optometric State Association of Maryland rented a building and equipped a refracting room, the idea being to run this as a free clinic five evenings each week. The clinic was to be open from 6:30 to 8:30 each evening. The clinicians were to be the optometrists of Baltimore, who were divided into five groups, each group composed of three men, to serve one evening a week. Each group to consist of one chief of clinic and two associates. The following rules are to govern the clinic:

1. The examining of patients in this clinic shall be made by the chief of the clinic.
2. Chief of the clinic shall at all times be held responsible for the optometric treatment of the patients.
3. The optometric examination of all patients must include: examination by ophthalmoscope, ophthalmometer, retinoscope, phorometer; the findings of each to be carefully recorded.
4. The chief of clinic will also be held responsible for the attendance of his associates. Clinic will be opened and closed at hours designated.
5. The conduct of the chief shall be an example to his associates, as nothing will destroy the general morale of a clinic more than loud, boisterous talking, untidiness, smoking and anything else that would be unbecoming to a gentleman.
6. The chief must keep strict supervision over the hygienic conditions in the clinic.
7. Chief will be held strictly responsible for the condition of instruments while in charge. Upon reporting for duty, and finding any abuse, misplacement or loss of instruments, trial lenses or equipment of any kind, he shall report same immediately to the Board of Governors.
8. The chief of clinic and his associates will sign their names on time of reporting in register book provided for this purpose. The chief shall also be held for the entering of all records and the accomplishment of all clerical work.
9. Examiners shall wear white coats while on duty.

Roman, writing later regarding this same clinic, says it was so successful that the society had to enlarge it, adding two more refracting rooms, and had to in addition make arrangements to open the clinic three afternoons per week. Mondays, Wednesdays and Fridays were the days chosen and this time is devoted entirely to the school children, many of whom are sent to the clinic by the school nurses. The optometrists of Baltimore have had the complete co-operation of the mayor and Public Health Department of that city. **Ketchum** speaks of a different kind of a refractive clinic, that belonging to a college and serving the dual purpose of aiding the worthy and also of giving the students the opportunity of working on the cases, most of which come to the clinic from the charitable organizations of the city.

METHOD OF HANDLING CASES

Andreae, discussing the Maryland Clinic, writes that cases that are worthy are examined and supplied with glasses without cost. Cases which are not entirely objects of charity are charged some small fee, usually less than the cost of the material supplied. **Roman,** speaking of the refraction of school children at the same clinic, writes that upon arrival at the clinic the nurse states the child's particular

case to the man in charge at the desk, whereupon the entry is made in the daily register, which includes the full name of the little patient, address, age, race, name of school, grade, name of the nurse, whether glasses were prescribed or not, whether or not case was referred for medical treatment; also the signature of the examiner after the examination has been made. Then a record card is made out and the child is turned over to one of the examiners.

After a thorough examination, the child is led out to the recording and fitting desk again and if glasses are found necessary all facial measurements are taken here. The nurse then states the circumstances of the child's family, whether the parent can afford to pay something toward the cost of the glasses or if they shall be furnished free of any charge. It is left to the discretion of the city nurse.

The Rochester School of Optometry Clinic writes **Cox** is run only on the appointment basis, the patients making their appointments a week in advance in most cases. Five refracting rooms are used at a time, during the clinic periods, the students and faculty jointly doing the work.

CLINIC TECHNIC OF REFRACTION

Cox further states that all clinical examinations should, and at the Rochester School of Optometry do, consist of ophthalmoscopy, external ocular inspection, ophthalmometry, skiametry, both static and dynamic, subjective tests, duction and tonicity tests. The clinic refraction rooms are also equipped with perimeters, campimeters, sphygmomanometers, exophthalmometers, color tests and a binocular magnifier, these latter instruments being used as the occasion demands. **McFadden** has devised a test chart which he recommends for clinical use, the letters being so arranged as to have the patient give his own approximate acuity of vision in percentage as he reads them off. **Perrigo** also strongly advises the use of the percentage system of visual acuity notation, claiming it not only more accurate but also easier for the patient to comprehend. **Andreae** advises a clinical refraction similar to that suggested by Cox and also mentions the fees charged by the Maryland Clinic for the material supplied to patients able to pay something. These can purchase rimless or frame spectacle in alumnico or gold-filled wire temples at the following prices:

Meniscus sphere complete: 1st division, $2.90; 2nd division, $3.20.

Toric cylinders complete: 1st division, $3.60; 2nd division, $3.90.

Toric sphere cylinders complete, same as cylinders for cement bifocals, add $1.50.

Those patients able to pay and not desiring the clinic's standard outfit will be given prescription upon payment of $1.

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Original papers, scientific communications and correspondence should be addressed to Editor. Books for review should be sent to Dr. E. O. Fjelstad, Red Wing, Minnesota. Reports of society proceedings in Minnesota should be sent to Dr. A. R. Burquist, in North Dakota to Dr. A. S. Anderson, and in Nebraska to Dr. A. M. Skeffington. Special Reports should be sent to Dr. A. H. Nordland. News items should be sent to Dr. H. B. Kollofski.

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JACK I. KURTZ, Room 209, Yeates Building, Minneapolis, Minnesota.

The Journal has no objection to the reprinting by other magazines of any of its articles, providing such reprints are properly credited to the Northwest Journal of Optometry

THE POST-GRADUATE CLINIC

The ever-increasing numbers of optometric clinics being reported brings a quickening consciousness of the almost unbelievably rapid strides being made by the rank and file towards professionalism, in the best sense of the word. This consciousness, however, is merely a belated attempt to keep step with the advance of public opinion and demand.

We have been slow to recognize this growth of public sentiment. For long we have talked vaguely of "making the public eye-conscious," whereas the mass of our people have simply been a-wearyin' for some group to whom they could turn with entire confidence that their eyes would be the prime consideration. In other words, commercialism has made our public extremely wary.

Certainly no method yet devised to meet this condition has been evolved that compares, at least judging from such results as are today available, as the post-graduate clinic. This form of professional endeavor seems to meet the manifold needs better than any other yet devised.

The refraction clinic, where it is maintained as a permanent affair, for the alleviation of the needs of poor folk, is a most worth-while movement, charitable and worthy of emulation. That type free clinic is admirable in every way. But the free clinic held once a year or so, purely as a publicity affair, smacks too greatly of charlatanism and tends to label itself as a propaganda measure pure and simple.

The instruction available to the optometrists attending is, of necessity, very meagre, for the refractionists have the patients to consider first and no time is available for expounding the theory and science behind every move. Few men are capable of absorbing greatly from simply observing other men work. To be rightly a "free clinic" everything should be free and if such materials as are needed are so supplied, the conviction of extortion by individual practitioners is enhanced.

The post-graduate clinic, on the other hand, by its very name does away with the suspicion of propaganda. The consultants applying know that, by its very nature, the men attending it have the first consideration. To make it a success, in the highest sense, it is essential to bring in a refractionist with a reputation or the attendance will be small and the interest slight.

The featuring of the clinician makes readable and printable news for the local press, and so the press is educated to the fact that optometry is a profession, doing professional things, behaving in a professional manner.

The consultants are always those who have failed to find relief elsewhere, and their name is Legion. They are not indigent and needy. The very best types, those to whom optometry most wishes to appeal, come to the post-graduate clinic. The case is handled efficiently and the very explanations of the clinician inspire faith and confidence in the consultant. Completed, the case, with history and prognosis, together with directions for completion, are referred to some competent, equipped optometrist for fulfillment, which means that another worth-while case is brought into the fold of optometry. The number of folk who apply to the post-graduate clinics who have never consulted an optometrist is shocking.

In every sense educative in that it educates the optometrists already in the field to the newer and better methods current in the profession, educates the public to the fact that optometry is primarily a profession interested in preserving eyes and not a trade interested in dispensing spectacles, brings the true status of optometry, before the press of the country, and if the prestige of the clinician is used to obtain speaking opportunities, brings the value of optometry as an economic asset to the executives of the community. The post-graduate clinic seems to be the logical educative effort upon which to focus our efforts.

If we can promote these over the whole country, if we can obtain men from our ranks adequate for this work, if the support of individual and organized optometry can be enlisted in this superlatively valuable ally in the advancement of optometry, there is no reasonable doubt that our profession will be advanced more rapidly towards that goal for which we have ever striven, than can be accomplished by any other means. A. M. S.

CAMP BENNING AND THE SOUTHEASTERN CONGRESS

The coming Southeastern Congress to be held shortly at Columbus, Georgia, will probably be as important a gathering from an educational standpoint as any meeting of refractionists to be held in this country during the present year. The customary speakers will of course be in attendance and do their splendid share towards increasing the fund of refractive knowledge of the optometrists present, but this year at Columbus a different sort of educational treat will also be given the optometrists. To quote from an editorial in the October, 1924, issue of the North Carolina Optometrist:

"The 1925 session of the South Eastern Congress of Optometry will be held in Columbus, Ga. Dr. M. B. Clason, Regional Director, has started the ball to rolling, and in a very short time will have his plans rounded out. No doubt this will be one of the greatest gatherings of Optometrists ever held in the Southland. The lectures and Clinics will be conducted by the very best educators to be found in the profession * * *.

"The entertainment features will be far superior to anything ever attempted before. The Optometrists and visitors will be the guests of the Officers of Camp Benning one day during the session of this Congress * * * *.

"Camp Benning is ten miles south of Columbus, situated on the east bank of the Chattahoochee River. The reservation comprises 98,000 acres, 17 miles in length and 13 miles wide. It is the largest and most interesting military institution in America.

"Organizations stationed at Camp Benning include Infantry, Field Artillery, Engineers' Air Service (both balloon companies and aeroplane detachments), Quartermaster Corps, Signal Corps, Ordnance corps. All these are used in carrying on the administration of the school and in staging demonstrations and battles that involve co-operation of the troops of different branches of the service.

"A comparatively small number of Americans were permitted to witness the thrilling drama of men in action at the front during the World War and only a few will ever visit the silent battle fields, but a trip to Camp Benning is now in reach of every Optometrist in the South Eastern Regional. The Optometrists will be the guests of the Officers of Camp Benning one full day during our stay at Columbus, a battle will be staged for our benefit. There the surroundings reproduce conditions about Soissons Chateau-Thierry, St. Mihiel and the Argonne. Here we will see demonstrations of battalions in attack, aeroplane, balloons, artillery and men from the chemical warfare service, an actual reproduction of the doughboy in action when real ammunition is used and the real obstacles to overcome and only the enemy is imaginary.

"Aside from the entertainment features of the day we will have the privilege of visit-

ing the hospitals, attend eye conservation clinics, and demonstrations of instruments used by the Government in caring for the eyes, etc. This will be a great week for the Optometrists and not one can afford to miss this opportunity."

Indeed the men of the Southland are fortunate to have this first-hand opportunity to study the ocular needs of this important branch of our government service, for this, we have been informed, is the real reason for the invitation to visit the camp. As a science, refraction is not keeping pace with the other fields of scientific endeavor. Government experts realize this and are now planning to stimulate the proper sort of refractive thought and education wherever it may best be made to serve their technical purposes, and in this it behooves optometrists to keep well abreast of the times, inasmuch as many splendid opportunities will be forthcoming within the next decade, which, providing we as a profession are ready, we will be able to receive.

Dr. M. B. Clayson, optometrist of Columbus, Georgia, has performed a distinct service to his profession in placing himself in such a favorable professional position as to merit and receive this invitation from our government to visit, with his colleagues, this immense military plant, and to him and Dr. F. P. Barr, who will assist him, the profession owes a lasting debt of gratitude. C. C. K.

REPORTS AND ANNOUNCEMENTS OF SOCIETIES

THE NORTH DAKOTA STATE BOARD OF HEALTH TO CORRECT ERROR

The secretary of the North Dakota Optometric Society recently called the attention of the State Health Department to the use of the word "optician" in one of the pupil school record blanks issued by the department, whereas the word "optometrist" should have been used. In that particular part of the blank that refers to eyesight correction the blank requests the person filling it out, be it school physician, school nurse, or teacher, to designate whether the eyesight correction was prescribed by an oculist or an optician. Dr. A. A. Whittemore of the State Board of Health, in answer to a letter from Dr. A. S. Anderson, writes as follows: "We wish to thank you and your association for your constructive criticism of our forms C-5, and will state that the correction will be made as soon as more of these forms are printed. This form was made over several years ago from one of the Red Cross forms and the portion mentioned in your letter was not changed from the original form. I am unable to find one of the old forms from which this was made and do not know whether the mistake was made by the printer or whether it occurred in the original form."—A. A. Whittemore, M.D., State Health Department.

NEBRASKA SOCIETY REPORTS

Dr. H. P. Blaine of Norfolk has been doing some excellent work in addressing organizations in his territory. He obtained the film for the American Optometric Association, showed it at talks in country schools, a men's club, parent-teachers' association and similar groups. It has proven a splendid thing for optometry.

Also this would be a splendid work to carry on throughout the entire state of Nebraska. The Publicity Department, under Dr. Hoffman of Minneapolis, will supply any talks needed, the film is available, and it is a good and highly interesting film, and nothing will do more to advance optometry and the enterprising optometrist who takes advantage of opportunity, than this type of work. We present it as an opportunity.

Dr. H. P. Blaine also, as chairman of the Clinic Committee, announces that two clinics have been definitely arranged, one at Broken Bow and one at Alliance. These were to have been held in February, but the storms and extremely bad roads made postponement until April advisable.

Dr. J. M. Perrigo, association president, has spent the month in Florida, forgetting the buffeting of zero north winds in the sunshine and sand (and sunburn and sand fleas) of the winter resort. He expects to return with an accumulation of energy that will simply buzz the wheels of the state association.

Dr. Geo. B. Berkeley has opened offices in the First National Bank Building, Scotts Bluff, Neb. Dr. Berkeley has installed a splendidly complete equipment for the professional practice of optometry. We welcome him to our state and hope that his tribe may increase.

Dr. M. L. Jones of Fairfield has been appointed a member of the State Board of Examiners, to fill the vacated place of Dr. Dixon. We look for an ever-increasing standard to be set by the state board so that Nebraska may become a state of adequate optometrists.

Dr. A. M. Skeffington conducted two prost-graduate clinics in South Dakota, at Aberdeen and Mitchell, the 9th and 10th of February. He also conducted the post-graduate clinic work for the Illinois Society at the Hotel Sherman in January. Press reports were very favorable.

Dr. W. A. Rowe recently purchased the Kirksville Optical Co. at Kirksville, Mo. Rowe was formerly located at Lincoln.

Nebraska optometrists are requested to get in touch with Roy A. Pennock, in care of the Riggs Optical Co. at Lincoln, should they hear him broadcasting eye conservation talks over KFAB of that city. He would like to know how it sounds at the receiving end.

MINNESOTA CONVENTION A GREAT SUCCESS

The twenty-fifth annual convention of the Minnesota State Association of Optometrists was held on February 16th and 17th at the West Hotel, Minneapolis, Minn. The first part of the morning was given over to the registration of the visiting optometrists.

At 10:00 A. M. Dr. J. L. Kubicek, President of the Association, formally opened the convention and gave his annual address. He briefly reviewed the progress of the profession and urged the members to carry on the good work.

Dr. L. L. DeMars, General Convention Chairman, next welcomed the delegates and then Dr. Gordon H. Gliddon of the Rochester School of Optometry delivered the first of his series of lectures on the "Nervous Mechanism of Vision." There was much interest displayed by the delegates in this lecture and the discussion that followed lasted until the noon hour.

In the afternoon Dr. C. C. Koch of Minneapolis, editor of the Northwest Journal of Optometry, spoke briefly on Campimetry. The rest of the afternoon was given over to "Eye Clinics" conducted by Dr. Roy S. Dean of Duluth, who was the chief clinician. A very interesting as well as complicated muscle case was examined.

At 6:00 P. M. a "get-together dinner" was served and there the delegates from the different parts of the state had an opportunity to meet together to renew acquaintances, during which the business session was carried on, the election of officers being the chief feature. Dr. A. C. Hoffman was chairman of the nominating committee, the following men being elected: President, Dr. C. G. Mack, Minneapolis; First Vice-President, Dr. C. C. Koch, Minneapolis; Second Vice-President, Dr. E. O. Fjelstad, Red Wing; Third Vice-President, Dr. Geo. C. Jensen, St. Paul; Fourth Vice-President, Dr. W. H. Nordin, Faribault; Secretary, Dr. J. I. Kurtz, Minneapolis; Treasurer, Dr. F. A. Zimmerman, Minneapolis.

After election of officers Dr. E. H. Kiekenapp was called upon to report on the work of the Legislative Committee and discussed the proposed amendments to the Optometry Law.

The delegates next listened to an interesting address by Mr. S. Williams, who spoke on the Golden Rule as Applied in Professional Practices. He was followed by Hon. W. I. Nolan, Lieutenant Governor of the state of Minnesota, who also delivered a very interesting and humorous address. This was followed by a smoker and an evening of fun and entertainment.

Tuesday Morning, February 17th

Dr. H. Gliddon delivered the second part of his lecture on "Nervous Mechanism of Vision," which was well received. He was followed by Dr. J. A. Heidbrink of Minneapolis, one of the leading oral surgeons and exodontists in the Northwest. Dr. Heidbrink delivered an illustrated lecture on "Focal Infection and its Relation to Eye Strain." In the afternoon Dr. Chas. Sheard of the Mayo Clinics spoke briefly to the delegates and was followed by Dr. Gordon H. Gliddon, who gave a splendid lecture on "Color and Color Theories."

A short business session was held in the afternoon, during which a number of resolutions were adopted.

After the business session a very elaborate banquet was served to the

capacity crowd which filled the West Hotel banquet hall. The principal speakers at the banquet were Dr. Gordon H. Gliddon, who told of Prof. Ames' work at Dartmouth, and the Dean Harry Walker of Duluth. Dean Walker delivered an inspiring address on "The Profession of Optometry and Its Own Unlimited Possibilities for Serving Humanity." The banquet was followed by dancing, the convention being a splendid success.

CLINICS IN SOUTH DAKOTA

Post graduate clinics were recently held in Aberdeen and Mitchell, S. D. These clinics were held under the direction of the South Dakota Optometric Association and were well attended. Dr. A. M. Skeffington, optometrist and clinician of Kearney, Neb., directed the clinics and assisted making these meetings the most successful ever held in the state.

OKLAHOMA ASSOCIATION OF OPTOMETRISTS

Dr. E. B. Alexander, optometrist of Duncan, Okla., secretary of the Oklahoma Association of Optometrists, recently sent out a two-page bulletin to the membership of that society urging the men to plan to attend the coming convention at Oklahoma City. The officers are planning big things at this convention and wish all interested to communicate with him at once. The Oklahoma Law Enforcement Fund is now larger than ever and he reports activities towards the enforcement of the Optometry Act. Six new members were taken in the association during the past month.

CURRENT LITERATURE

These are the titles of papers bearing on optometry, or papers written in such a manner as to be of interest to optometrists. These papers appear in various optometric and ophthalmic publications, as indicated. The papers have been grouped under appropriate heads, and in each group arranged alphabetically, usually by the Author's name in **heavy face type.** The abbreviations mean: (Ill.), illustrated; (Pl.), plates; (Abst.), indicates that it is an abstract of the original article; and (Dis.), that discussion is published with paper.

GENERAL REFRACTION

Bagwell, W. Antimetropia and the Idle Eye. (Abst.) N. W. Jour. of Optom. Vol. 2, No. 2, p. 44.

Blaine, H. P. High Myopia Mistaken for Amblyopic Blindness. N. W. Jour. of Optom. Vol. 2, No. 2, p. 41.

Evans, J. N. The Prism Scotometer. Amer. Jour. of Oph. Series 3, Vol. 8, No. 1, p. 60.

Fielding, E. Colored Lenses and Their Uses. (Ill.) The Cann. Optom. Vol. 7, No. 1, pp. 5-6.

Freeman, W. N. The Large Gullstrand Ophthalmoscope. The Opt. (Brit.). Vol. LXVIII, No. 1765, p. 395.

Glazer, W. H. Questions Concerning Astigmatism. Opt. Jour. and Rev. Vol. LV, No. 6, p. 33.

Howard, A. B. Ophthalmometer. Op. Jour. and Rev. Vol. LV, No. 3, pp. 37-38.

Hutchinson, E. A. Perimetry. (Editorial.) West. Opt. World. Vol. XII, No. 8, p. 388.

Jackson, E. Correction of Anisometropia. (Abst.) N. W. Jour. of Optom. Vol. 2, No. 2, p. 44.

Kerr, C. H. The Giant Ophthalmoscope. N. W. Jour. of Optom. Vol. 2, No. 2, pp. 40-41.

Laurance, L., and Wood, O. The Far Points of Accommodation and Convergence. (Ill.) Amer. Jour. of Phy. Opt. Vol. VI, No. 1, pp. 23-31.

MacRae, A. Refracting Work in General Medical Practice. (Abst.) The Opt. (Brit.) Vol. LXVIII, No. 1763, pp. 371-374.

Maddox, E. E. Arrow Test for Astigmatism. (Abst.) Amer. Jour. of Oph. Series 3, Vol. 8, No. 1, p. 83.

Maddox, E. E. The V Test for Astigmatism. Amer. Jour. of Phy. Opt. Vol. VI, No. 1, pp. 56-58.

Mann, S. D. Transillumination as Applied to Optometry. (Abst.) N. W. Jour. of Optom. Vol. 2, No. 2, p. 45.

Maybee, W. G. Correcting Astigmatism by the Subjective Method. (Abst.) The Conn. Optom. Vol. 1, No. 8, pp. 7-8.

Nott, I. S. Unusual Cases and Their Clinical Corrections. The Cann. Optom. Vol. 7, No. 1, pp. 10-11.

Olsho, S. L. A Range for Refraction Embodying New Features. (Ill.) Amer. Jour. of Oph. Series 3, Vol. 8, No. 1, pp. 57-59.

Peckham, R. M. The Cross Cylinder as a Check Test. (Abst.) N. W. Jour. of Optom. Vol. 2, No. 2, p. 45.

Percival, A. S. Alteration of the Power of a Cylinder When Used for Close Work. Brit. Jour. of Oph. Vol. IX, No. 1, pp. 8-13.

Pine, H. E. The Technic of Refraction. Opt. Jour. and Rev. Vol. LV, No. 5, pp. 27-29.

Ryer, E. LeRoy. Refractor's Value in Cases When Diameter of Pupil Is a Factor. Opt. Jour. and Rev. Vol. LV, No. 6, p. 34.

Sheard, C. Testing at the Near Point. (Abst.) The Conn. Optom. Vol. 1, No. 9, pp. 9-10.

Smith, J. W. Uses of Subjective Retinoscopy. (Abst.) N. W. Jour. of Optom. Vol. 2, No. 2, p. 46.

Stirling, A. W. Astigmatism. (Abst.) Amer. Jour. of Phy. Opt. Vol. VI, No. 1, pp. 114-122.

Young, G. On Macular Perception in Advanced Cataract. (Abst.) Amer. Jour. of Phy. Opt. Vol. VI, No. 1, pp. 123-126.

Practical Work in Pennsylvania Examinations. (Special Report.) Opt. Jour. and Rev. Vol. LV, No. 3, p. 43.

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Byrd, H. The Phenomena of Diplopia. (Ill.) Amer. Jour. of Phy. Opt. Vol. VI, No. 1, pp. 49-55.

De Selms, O. C. A Study in Therapy of Light. Opt. Jour. and Rev. Vol. LV, No. 3, pp. 33-36.

Sheard, C. Some Fundamental Principles of Modern Ophthalmic Lenses. (Ill.) Amer. Jour. of Phy. Opt. Vol. VI, No. 1, pp. 32-48.

Swain, Wm. Some Time Values in Vision. (Abst.) N. W. Jour. of Optom. Vol. 2, No. 2, p. 46.

Swindle, P. F. Effect of Strychnin on Visual Reliability. Amer. Jour. of Phy. Opt. Vol. VI, No. 1, pp. 3-20.

Troland, L. T. The Progress of Visual Science in 1921. Amer. Jour. of Phy. Opt. Vol. VI, No. 1, pp. 80-113.

Zoethout, W. D. Single Vision with Two Eyes. (Ill.) The Optom. Wky. Vol. XV, No. 48, pp. 2175-2176.

OCULAR MUSCLES

Davis, A. Nystagmus. (Abst.) N. W. Jour. of Optom. Vol. 2, No. 2, p. 44.

Johnson, L. Early Operation for Squint. The Ref. (Brit.). Vol. 14, No. 164, pp. 28-29.

Kilner, F. Imbalance of the Ocular Muscles. (Abst.) N. W. Jour. of Optom. Vol. 2, No. 2, p. 44.

Kurtz, J. I. Muscle Treatment in Exophoria. N. W. Jour. of Optom. Vol. 2, No. 2, pp. 34-39.

Mignot, A. Insuffisance des Droits Internes-Exophorie. (Abst.) N. W. Jour. of Optom. Vol. 2, No. 2, p. 45.

Tomkinson, J. G. Alopecia Areata and Strabismus. (Abst.) N. W. Jour. of Optom. Vol. 2, No. 2, p. 47.

Wells, D. W. The Value of Fusion Training and Methods for Its Development. (Ill.) Amer. Jour. of Oph. Series 3, Vol. 8, No. 1, pp. 47-53. (Abst.) N. W. Jour. of Optom. Vol. 2, No. 2, p. 47.

Some Further Comments on Cyclophoria. (Editorial.) Amer. Jour. of Phy. Opt. Vol. VI, No. 1, pp. 65-69.

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Atkinson, T. G. Headaches. (Abst.) The Mich. Optom. Vol. 3, No. 1, p. 4.

Greenwood, A. The Non-Operative Treatment for Cataract. (Abst.) N. W. Jour. of Optom. Vol. 2, No. 2, p. 44.

Maybee, W. G. Cataract. The Can. Optom. Vol. 7, No. 1, pp. 12-13.

Roman, H. Blue Lenses in Cataract Cases. (Abst.) N. W. Jour. of Optom. Vol. 2, No. 2, p. 46.

Taylor, I. The Medicinal Treatment for Cataract. (Abst.) N. W. Jour. of Optom. Vol. 2, No. 2, p. 47.

INDUSTRIAL EYE WORK

Altenberg, O. L. Report of Visual Tests of Members of the Toledo Auto Club. Opt. Jour. and Rev. Vol. LV, No. 3, p. 41.

Ireland. Eye Sight Testing in Schools. The Conn. Optom. Vol. 1, No. 9, p. 5.

Kaufman, C. H. What the Cincinnati Eye Court Revealed. (Abst.) Optom. Wky. Vol. XV, No. 48, p. 2189.

Koch, C. C. Visual Work in Schools. N. W. Jour. of Optom. Vol. 2, No. 2, pp. 42-43.

McFadden, F. Dangers of Motor Car Driving. The Conn. Optom. Vol. 1, No. 9, pp. 5-7. (Abst.) N. W. Jour. of Optom. Vol. 2, No. 2, p. 45.

Oblath, G. Physio-Pathology of Ocular Fatigue. (Abst.) Brit. Jour. of Oph. Vol. IX, No. 1, pp. 24-26.

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Edridge-Green, F. W. Temporary Color Blindness. (Abst.) N. W. Jour. of Optom. Vol. 2, No. 2, p. 44.

Neifield, M. R. Dr. Troland's Discussion of the Color Sensations. Amer. Jour. of Phy. Opt. Vol. VI, No. 1, pp. 70-79.

OCULAR HYGIENE

Maybee, W. G. Advice That Optometrists May Give to Their Patients. (Abst.) N. W. Jour. of Optom. Vol. 2, No. 2, p. 45.

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Arnold, E. C. Opticians and Oculists. (Abst.) The Opt. (Brit.) Vol. LXVIII, No. 1762, pp. 347-348.

Fording, H. L. A Public Lecture on Vision and Eye-Strain. Opt. Jour. and Rev. Vol. LV, No. 4, pp. 23-25.

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Harman, N. B. Ophthalmic Benefits for Insured Persons. (Abst.) The Opt. (Brit.) Vol. LXVIII, No. 1764, pp. 386-390.

Kao, T. C. The Development of an Optometric Practice in China. Opt. Jour. and Rev. Vol. LV, No. 5, p. 38.

Rayhorn, L. E. Responsibility to the Patient. Opt. Jour. and Rev. Vol. LV, No. 4, p. 26.

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Hardy, W. E. Frame Measurements. The Opt. (Brit.) Vol. LXVIII, No. 1765, pp. 398-400.

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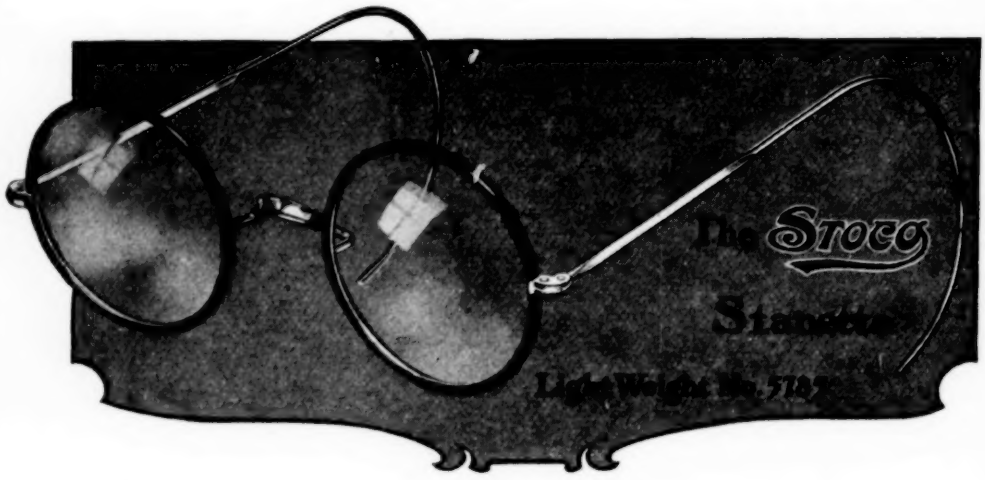

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